

REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of February 7, 2007.

Amendment and reconsideration of the Application is requested.

The Subject Embodiments

The subject embodiments are directed to a distributed image processing system typically including a plurality of imaging devices (i.e., printers or copy stations) in network communication with an asset management system and services host system which are capable of communicating with the imaging devices to assess performance for service application program running. The imaging devices are typically remote from both the asset management system and the services host system. A feature of the subject embodiments is that the deployed imaging devices include a Device Model Agent (DMA) disposed within the imaging devices for interactive communication between the asset management system and services host system functioning as an interface layer that provides a common view of device data, event and operations to system management applications. More particularly, the DMA module includes a first DMA application for monitoring imaging device events and prescribing corresponding actions and a second DMA application for performing dynamic updates of executable imaging device services. A service management component of the DMA module selectively cooperates with the first and second DMA applications and facilitates the interactive communication with the asset managing system and services host system so that the DMA module enables imaging device active participation in the service applications. Such active participation is to be contrasted with mere resident data storage and communication.

The Device Model Agent (DMA), the "device side" technology module in Device Centric Services (DCS) platform is a thin, efficient applications/services execution environment. The DMA provides a flexible, extensible, dynamic services management system allowing e-services to be designed, added, and managed within an imaging system without modifying the DCS platform itself.

The Device Model Agent as described herein adds the following capabilities to document system devices. The unique combination of these capabilities enables several benefits related to system management application development, deployment, and maintenance.

1. Active participation in applications and services offerings (post-sale, system management, and other services)

The devices that embed the DMA module can perform several computational tasks required in system management applications and services. In this architecture an application server (e.g., installed in customer environment or a Xerox back office server) and the target device collaborate to complete system management offerings. The DMA provides a service execution environment where a service may run as a whole or be part of a system management application running on an application server.

The DMA services are capable of performing the following tasks.

- Monitor device events and take prescribed actions
- Publish data to subscribers upon occurrence of an event of interest
- Invoke methods (such as diagnostic routines) on the device as directed by external clients.

2. Dynamic updates of services and support components

Operating within the end-to-end DCS platform the devices that embed DMA module can add new service components dynamically. It allows a customer or application components already on the device to request such additions to support services. It allows the addition (or deletion) of components as needed and without system or DMA recompilation or restart. The target device itself initiates the additions of a new or upgraded service as a whole or supporting components for existing services. Thus in the system described herein the device is now responsible for initiating the activity to maintain itself and system management services running on it.

3. Device Independent Applications

Present embodiments recognize the need for an application/services execution environment to enable developers to work with consistent and standards-based tool sets. The DMA module enables the development of device independent post-sale applications. Applications written using DMA interfaces do not have to change to

accommodate new or upgraded (DMA enabled) devices. While DMA implements model-based approach espoused by DMTF for achieving device independence for applications/services, it adds to this implementation a new component called the Service Manager. The Service Manager is primarily responsible for the following actions related to services.

- Control service lifecycle of each service activated for the device
- Manage services
- Programmatic interface (API) for system management clients (local or remote) for control and management of services

4. Dynamic services provisioning

Operating within the end-to-end DCS platform the DMA-enabled devices and DCS application server allows services provisioning and management by application server hosted by a third-party service provider. The DMA-enabled devices and application servers collaborate to provide dynamic provisioning. Using this system a customer would be able to review a set of applications, select or customize one or more applications to fit. In order to cover new and existing (MIF) device base, the architecture of DMA allows its deployment in the following scenarios.

- Embedded in a networked device, such as a printer or multifunction device.
- Embedded in a specialized hardware for standalone devices such as a copier or for existing devices in field.
- Embedded in network application either as a single device proxy or multiple device proxy configurations.

The Examiner's Action

With regards to the Examiner's notification that a prior-filed application is unavailable for benefit due to lack of a common inventor, Applicants have deleted the claim for benefit to the referenced application. The application specification has been accordingly amended.

Concerning the Examiner's objection to paragraph 2 of the specification, a

corresponding amendment has also been included. The Examiner's assistance in this regard is gratefully acknowledged.

Concerning the objections to claims 1-21 for informalities as well as the rejections for indefiniteness and direction to a non-statutory subject matter, the Examiner will appreciate that all pending claims have been canceled and that new claims have been provided which avoid the preceding Examiner's objections and rejections.

The Cited References

Mandal discloses a data imaging managing system having a system tier or agent residing in a host device comprising a Common Information Model (CIM) provider comprising a passive data collection and communication provider, but also can make "method calls" on the low-level kernel routines but merely for informational communication purposes and not for active participation in enabled service applications. More particularly, the CIM Object Manager (CIMOM) can contact a CIM provider to control the CIM provider through the running of method calls for purposes of transferring data between specified master and shadow volumes. In other words, all of the object managing control is merely for data transfer as opposed to "intelligent" prescribing a course of corresponding actions based upon monitored data for the performing of dynamic updates as determined at the DMA module of executable service applications.

The other cited references have also been considered but similarly, either individually or in combination, each lack presently claimed elements.

The New Claims

The Examiner will appreciate that the subject developments have been defined in a manner to distinguish over a mere data passing structure between multiple tiers in a network image processing systems. More particularly, the DMA module of the subject embodiments includes a CIMOM and service manager elements which cooperate to execute active participation in service applications at the local level of the imaging device that are more active than mere data passing activities of the cited references. More particularly, the claims now specify that the DMA module includes applications for

prescribing corrective actions based on monitored imaging device events and for performing dynamic updates of executable imaging device services. Such prescribed actions may include publishing service application data and invoking diagnostic service routines (claims 23). The updated executable imaging device services includes adding new service components that can be selectively initiated by the imaging device itself (claim 24). In addition, the service manager application of the DMA module is limited to comprising a standards-based tool set as an infrastructure basis for device independent application that is more independent of the imaging device resources.

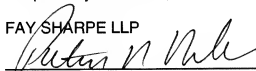
CONCLUSION

In view of the foregoing, it is believed this application is now in condition for allowance and early notice thereof is respectfully submitted.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Patrick R. Roche, at Telephone Number (216) 861-5582.

Respectfully submitted,

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Date